January 2013

Who creates jobs, who destroys jobs? Small firms, large firms and labour market rigidity

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Firm-level data for the period 2005 to 2011 indicate that job creation and destruction rates in South Africa are only slightly lower than among OECD countries. Around 10% of existing jobs are destroyed each year, while the number of new jobs is around 9.5% of existing employment. Larger firms have higher rates of net job creation than small firms. The relatively high reallocation of employment across firms suggests lower rigidities in the South African labour market than is sometimes believed.

Introduction

Researchers have accumulated substantial knowledge about the South African labour market from household and labour force surveys. We now know a good deal about who is employed and who is not, as well as who earns what.

What has been missing is an analysis of labour demand emanating from firms over time. For example, we know very little about which firms create more jobs and how big the effects of shrinking or growing firms are on the workers laid off or hired by these firms. While total employment may grow, we are still ignorant about which firms are growing, which sections of the economy attract new firms, where jobs are being lost, or which firms are leaving the market.

A new look at firm-level employment data

We use firm-level panel data from the Quarterly Employment Survey (QES) data between 2005 and 2011 to fill the gaps in our knowledge. Although the data are confidential, it is available to other researchers and we are in discussions with Statistics South Africa to make it more widely available.*

Using this enterprise-level employment data, we measure how jobs are created and destroyed by firms over time. The results suggest that there is a substantial reallocation of employment across firms, with important implications for the way in which researchers and policy-makers think about the South African labour market.

The QES data cover a large sample of South African enterprises from the business register. The three samples we use cover roughly 15 000, 17 000 and 18 000 enterprises, which represent around 10% of the total number of enterprises in the sample frame; and around 50% of total employment in firms in the sample frame. Its coverage is limited in that it excludes all agricultural and mining enterprises – as well as all firms that are not registered (informal firms). Public sector departments, universities and parastatals are surveyed but we exclude them from our analysis.

We explore demand in the labour market by looking at rates of job creation and destruction, i.e. the percentage of existing jobs that have been created by expanding firms or new entrants ('births') in a 12 month period, as well as the percentage of jobs that have been lost (or 'destroyed') in shrinking firms or firms that shut down ('deaths'). We use the level of employment of each firm in the sample in each quarter and measure employment changes over both one year and over each quarter. In other words, if a firm expands by 12 employees between June 2008 and June 2009, it contributes 12 jobs to the job-creation figure in that year. Conversely, if a firm contracts by 50 employees, it contributes 50 jobs to the job destruction figure.

Because the enterprise is a legal concept, we only have information on the total employment numbers in each enterprise. This means we do not see changes in employment at the plant or sub-enterprise (i.e. the establishment) level. As a result, we are underestimating the actual numbers of jobs created and destroyed *at the establishment level*. For example, if a manufacturing enterprise opens one plant with 100 employees and closes another employing 100, there would be no change in its employment in the QES. In addition, if a manufacturing enterprise hires 10 new lawyers and fires 10 production workers, we measure no change in employment.

Unfortunately, the QES data are weak in terms of measuring employment created by the birth of firms, since the panel is not refreshed after its inception and new firms can only be included when a new sample is taken. This means the number of jobs created by births (which is likely to involve new small firms) is likely to be underestimated.

Overall rates of job creation and job destruction and market rigidity

We find that around 10% of existing jobs are destroyed each year, while the number of new jobs created each year accounts for around 9.5% of existing employment. Thus we find that around 20% of the total of formal jobs outside agriculture and mining are either created or destroyed in each year (this is the *gross reallocation rate*).

Since the available data indicate that we underestimate the number of jobs created by births and reallocation (because small firms at the sample changeovers are not indicated), this reallocation rate is comparable with those found in other countries. For example, Haltiwanger et al (2008) find job reallocation rates of 25% in OECD economies and 30% in Latin American economies.

Our estimates are also not inconsistent with the analysis of household survey data by Banerjee et al (2008), who find a high level of mobility at the individual level when considering changes in the workers' state of employment. For example, using the Labour Force Survey panel data from between 2001 and 2004, they find that of those with formal sector employment, 16% changed into another employment state (e.g. informal employment or unemployment) after six months.

These results mean that there is a relatively high amount of reallocation of employment across firms. This suggests that there may be lower rigidities in the South African labour market than is sometimes believed (especially with reference to the effects of labour legislation).

Large versus small firms

Our results suggest that large firms have the highest rates of net employment creation. Table 1 shows that, in enterprises with 5 000 or more employees, gross job creation rates are nearly 3 percentage points higher than gross job destruction rates. By contrast, in enterprises with 0-19 employees, we find the reverse: gross job *destruction* rates are approximately 4 percentage points higher than gross job creation rates.

Table 1: Average yearly job creation (JC) and destruction (JD) by employment size category

Size category	Initial number of firms (unweighted)	Weighted empl share (%)	JC (%)	JD (%)	Birth contrib. to JC (%)	Death contrib. to JD (%)
1-19	7450	16.2	10.0	14.3	12.7	34.4
20-49	3678	15.6	11.7	12.2	12.2	33.3
50-99	2600	11.2	9.8	13.0	7.2	22.3
100-249	2513	10.3	9.7	11.3	8.7	28.3
250-499	993	6.2	10.7	10.9	12.3	26.9
500-999	526	5.9	11.3	8.6	11.5	16.0
1000-2499	243	7.3	10.8	8.3	9.6	16.9
2500-4999	91	6.4	12.5	6.9	11.0	11.8
5000+	77	20.9	6.7	4.0	10.3	7.1

Source: Own calculations from QES. These are weighted results.

When they are translated into actual employment numbers, these results mean, for example, that in the period between 2005 and 2011 the category of smallest firms contributed about 75 000 jobs to yearly gross job creation, but around 110 000 jobs to yearly gross job destruction. The largest firms contributed only around 60 000 jobs to gross job creation on average per year – but also only 37 000 to gross job destruction. A firm size of 500 employees seems to have been the threshold for positive net employment creation in this period.

If this is a long-term trend, it would suggest that large firms are becoming an ever more important source of formal sector employment, although this conclusion is qualified by the limited period covered by the data.

(Gross job creation rates would be higher if we had better data on 'births', as noted above. This would raise gross job creation rates relatively more in smaller firms, where births occur more frequently. However, it is unlikely that improved births data would lead to net creation rates for small firms that are in any way close to those of larger firms.)

The final two columns of table 1 show the percentage contributed to gross job creation and destruction by firm births and deaths, respectively. Firm births and deaths have a smaller role in determining employment over time than organic expansion and shrinkage. For example, of the 110 000 jobs lost annually in the smallest firm category, only a third has been due to firm closures (deaths). But firm death as a cause of job destruction is stronger among smaller firms: only 7% of the 37 000 job losses of the largest firms has been due to closures, as against 34% for the smallest firm category. (This 34% entails thousands of small firms.)

Sectoral and size patterns

Exploring the manufacturing sector in particular, we mostly find higher rates of job destruction than job creation in the period 2005 to 2011. Table 2 shows that only the food and beverage manufacturers have had positive net employment creation whilst the highest rates of net job destruction have come from textiles. This is unsurprising, given the woes of textile firms that appear to be unable to compete with imports from China and elsewhere.

Table 2: Average yearly job creation (JC) and destruction (JD) in manufacturing sectors

Sector (2-digit SIC)	Initial number of firms (unweighted)	JC (%)	JD (%)	Birth contrib. to JC (%)	Death contrib. to JD (%)
Food, beverages and tobacco	441	9.7	7.4	7.9	16.1
Textiles	669	6.5	12.7	8.1	26.1
Wood and paper	765	6.8	10.1	8.5	30.0
Petroleum and rubber	561	7.5	7.9	5.7	22.4
Non-metallic minerals	229	8.2	11.8	12.8	26.8
Metals	1777	10.0	9.8	11.0	23.6
Electrical machinery	342	8.6	8.6	1.1	28.9
Communication and medical	361	8.7	8.7	9.8	22.5
Transport equipment	565	8.1	9.6	8.0	26.0
Miscellaneous	665	8.4	12.1	7.5	27.9

Source: own calculations from QES. These are weighted results.

Firm death as a cause of job destruction is fairly similar among those sectors with negative net employment creation – and at a much higher level than for the better-off food and beverage sector. Still, job destruction predominantly occurs due to firm shrinkage rather than firm closure.

We find that the size of the median manufacturing enterprise (in terms of employment) is not much different to the plant size figures reported in Hsieh and Klenow (2011) for India and Mexico. This suggests that small firms do employ a significant fraction of all employees. However, if we lined up all workers in the QES firms in order of the size of the enterprise in which they work, we would find that South Africa's enterprises are very large when compared to Indian and Mexican plants. The median worker (according to the size of the enterprise) works in an enterprise of 156 employees; whilst the figure (for plants) is 5 in India, 24 in Mexico and 900 in the US.

Possible policy implications

The National Planning Commission's National Development Plan envisages that most of the vast numbers of new employment to be created by 2030 will come from small and medium-sized firms. Our research suggests that this is unlikely to occur unless regulation or policy changes fairly dramatically to create a more enabling environment and higher rates of birth, survival and growth for SMMEs.

One important focus for future research would be to explore why the net rate of creating jobs is so low amongst small firms. Explanations could include bargaining council legislation

that compels small firms to pay the same wages as large firms, credit constraints and crime (Kingdon and Knight 2004).

Secondly, as noted above, the relatively high rate of reallocation of employment across firms and suggests that South African labour legislation may not be as onerous for firms, or cause as much rigidity in the labour market, as is sometimes believed.

Conclusion

Our work on the firm-level QES data sheds light on the patterns of labour demand in South African firms. We find relatively high levels of job creation and destruction, which suggests lower rigidities in the South African labour market than is sometimes believed. Between 2005 and 2011, net employment growth came mainly from large firms. The importance of large firms in net employment creation in South Africa makes the country an anomaly relative to many other economies. On average, firms in South Africa are much larger than in other countries where this has been measured.

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* EDITOR's NOTE: Obtaining and providing access to these data in collaboration with Statistics South Africa and DataFirst is a data initiative of the *Research Project on Employment, Income Distribution and Inclusive Growth*.

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